UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,543	08/08/2006	**Benny Pesach**	227/04819	4415

44909 7590 12/17/2010

PRTSI
P.O. Box 16446
Arlington, VA 22215

EXAMINER	
LIU, CHU CHUAN	
ART UNIT	PAPER NUMBER
4123	
MAIL DATE	DELIVERY MODE
12/17/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/551,543	PESACH ET AL.	
	Examiner	Art Unit	
	CHU CHUAN LIU	4123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/06/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the length of the abstract is too long (214 words). The abstract should be in narrative form and generally limited to a single paragraph within the range of **50 to 150** words. Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities: A word "reduced" should be inserted between "The" and "scattering coefficient" in line 8 on page 14. Appropriate correction is required.

Claim Objections

3. Claims 4, 8, 21, 24 and 25 are objected to because of the following informalities: In regard to claim 4, a term "at" should be added after the "coefficient" in line 2. In regard to claim 8, the term "the function" lacks an antecedent basis. In regard to claim 21, the phrase "wherein and" should be deleted. In regard to claim 24, the term "the function" lacks an antecedent basis. In regard to claim 25, the term "and" before "comprising" should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1-7, 9 , 14-16, 19-23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,348,002 to Caro (Caro), in view of U.S Patent 5,743,262 to Lepper, Jr. *et al.* (Lepper). In regard to claim 1, Caro disclose an apparatus (apparatus, Fig. 1) for assaying a target analyte (analyte in a medium, Col 6 lines 18-30; blood glucose, Col 23 lines 6-12) in a localized tissue region (volume of the medium, Col 6 lines 18-30 and tissue 121, Fig. 1) that may include the target and other analytes (multi-component mixture, Col 6 lines 5-17; Col 23 lines 6-12): a light source (light source 124, Fig. 2) that illuminates the region with light at each of a plurality of wavelengths (Col 10 lines 6-10 and lines 36-42) at which light is absorbed and/or scattered by tissue in the region (Col 15 lines 11-14) wherein light at at least one of the wavelengths is absorbed or scattered by the target analyte (optical wavelength range between 400nm to 3000nm, Col 10 lines 6-10. Typical glucose concentration is measured within the wavelength range); a signal generator (transducer 108, Fig. 1) that generates signals responsive to intensity of the light from the light source at different locations (Col 14 lines 33-36) in the localized region (Col 6 lines 18-30; Col 14 lines 56-66); and a controller (control unit 111, Fig. 2) that: receives the generated signals (Fig. 2); processes the signals to determine an extinction coefficient (Col 16, lines 34-44) for light in the localized region at each wavelength (Equation 1-3, Col 14 line 33- Col 15 line 39); and determines the concentration of the target analyte responsive to a solution (absorption coefficient, Fig. 8 and Col 16 lines 34-66) of a set of simultaneous equations (Col 16, lines 45-56 and Col 17 lines 35-65) having as unknown variables of a plurality

of analytes in the region (Col 16 lines 34-66), one of which is the target analyte (Col 23 lines 6-12), wherein each equation in the set expresses a relationship between the extinction coefficient (effective attenuation coefficient μ_{eff}, Col 15 lines 36-38), the absorption coefficient (absorption coefficient μ_a, Col 15 lines 1-6) and/or the reduced scattering coefficient (effective scattering transport coefficient μ'_s, Col 15 lines 14-19) for light at a different one of the plurality of wavelengths (Col 15 lines 45-62) and at least one of the equations expresses a relationship between the extinction coefficient and the reduced scattering coefficient (equations 2 and 3, Col 15 lines 29-38). Caro does not specifically disclose the equations having unknown variables concentrations of a plurality of analytes. Lepper teaches the determination of the concentration of the target analyte (water, Col16 line 66 – Col 17 line 35) responsive to a solution of a set of simultaneous equations (equation 7, Col 17) having as unknown variables concentrations of a plurality of analytes in the region (water, oil or alcohol, equation 6, 7, and 8 in Col 17 lines 11-30; concentration of glucose in blood, Col 17 lines 30-35). Both Caro and Lepper apply Beer-Lambert law to determine the absorption coefficients of analytes based on the incident light and the detected light intensities at multiple wavelengths. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the set of simultaneous equations (Caro) to the equations having unknown concentrations (Lepper) in order to efficiently obtain the concentration information of analytes without comparing to a model of known absorption spectrum (Fig. 8 of Caro).

In regard to claim 2, Caro discloses the equation that expresses a relationship between the extinction coefficient and the reduced scattering coefficient includes a dependence on the absorption coefficient (equation 3, Col 15 lines 30-38 and the effective scattering transport coefficient μ'_s, Col 15 lines 14-19).

In regard to claim 3, Caro discloses the reduced scattering coefficient at at least one of the wavelengths (near infrared wavelengths, Col 15 lines 45-51) is a measured value of the reduced scattering coefficient (Col 15 lines 14-19 and lines 45-51).

In regard to claim 4, Caro discloses the reduced scattering coefficient at at least one of the wavelengths (near infrared wavelengths, Col 15 lines 45-51) is a value determined responsive to an analytic expression (substitute equations 3 into equation 2, Col 15 lines 45-51).

In regard to claim 5, Caro discloses the reduced scattering coefficient at at least one of the wavelengths is expressed as an analytic function (substitute equations 3 into equation 2, Col 15 lines 29-51).

In regard to claim 6, Caro discloses the analytic expression is a function (substitute equations 3 into equation 2, Col 15 lines 29-51) of at least one unknown variable (absorption coefficient μ_a, Col 16 lines 45-66) having a value determinable responsive to a solution of the simultaneous equations (Col 16 lines 45-66).

In regard to claim 7, Caro as modified by Lepper discloses each and every limitation as discussed above in reference to claim 1.

In regard to claim 9, Caro discloses wherein the signal generator comprises at least one acoustic transducer (transducer 108, Fig. 1) that generates signals responsive

to acoustic energy that reaches the transducer from photoacoustic waves generated in the region by the light (Col 9 lines 27-33) .

In regard to claim 14, Caro discloses the localized region is a bolus of blood (Col 23 lines 6-12 and claim 8).

In regard to claim 15, Caro discloses a method of assaying a target analyte (analyte in a medium, Col 6 lines 18-30; blood glucose, Col 23 lines 6-12) in a region of body tissue (biological tissues, Col 8 lines 26-38) that may include the target and other analytes (multi-component mixture, Col 6 lines 5-17; Col 23 lines 6-12) comprising: determining an extinction coefficient (effective attenuation coefficient μ_{eff}, , Col 15 lines 36-38) for light at each of a plurality of different wavelengths (Col 10 lines 6-10 and lines 36-42) at which light is absorbed and/or scattered by tissue in the region (Col 15 lines 11-14) and wherein light at least one of the wavelengths is absorbed and/or scattered by the analyte (optical wavelength range between 400nm to 3000nm, Col 10 lines 6-10. Typical glucose concentration is measured within the wavelength range); providing an analytic expression (equations 2 and 3, Col 15) for the reduced scattering coefficient (Col 15 lines 14-19) at each wavelength (Col 15 lines 29-63); and determining the concentration of the target analyte (Col 16, lines 45-56) responsive to a solution (absorption coefficient, Fig. 8 and Col 16 lines 34-66) of a set of simultaneous equations (Col 16, lines 45-56 and Col 17 lines 35-65) having as unknown variables of a plurality of analytes in the region (Col 16 lines 34-66), one of which is the target analyte (Col 23 lines 6-12), wherein each equation in the set expresses a relationship between the extinction coefficient(effective attenuation coefficient μ_{eff}, , Col 15 lines 36-38), the

absorption coefficient (absorption coefficient μ_a, Col 15 lines 1-6) and/or the reduced scattering coefficient (effective scattering transport coefficient μ'_s, Col 15 lines 14-19) for light at a different one of the plurality of wavelengths (Col 15 lines 45-62) and at least one of the equations expresses a relationship between the extinction coefficient and the reduced scattering coefficient (equation 2 and 3, Col 15 lines 29-38). Caro does not specifically disclose the equations having unknown variables concentrations of a plurality of analytes. Lepper teaches the determination of the concentration of the target analyte (water, Col16 line 66 – Col 17 line 35) responsive to a solution of a set of simultaneous equations (equation 7, Col 17) having as unknown variables concentrations of a plurality of analytes in the region (water, oil or alcohol, equation 6, 7, and 8 in Col 17 lines 11-30; concentration of glucose in blood, Col 17 lines 30-35. Both Caro and Lepper apply Beer-Lambert law to determine the absorption coefficients of analytes base on the incident light and the detected light intensities at multiple wavelengths. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the set of simultaneous equations (Caro) to the equations having unknown concentrations (Lepper) in order to efficiently obtain the concentration information of analytes without comparing to a model of known absorption spectrum (Fig. 8 of Caro).

In regard to claim 16, Caro discloses the at least one equation that expresses a relationship between the extinction coefficient and the reduced scattering coefficient includes a dependence on the absorption coefficient (equation 3, Col 15 lines 30-38 and the effective scattering transport coefficient μ'_s, Col 15 lines 14-19).

In regard to claim 19, Caro discloses the reduced scattering coefficient at at least one of the wavelengths (near infrared wavelengths, Col 15 lines 45-51) is a measured value of the reduced scattering coefficient (Col 15 lines 14-19 and lines 45-51).

In regard to claim 20, Caro discloses the reduced scattering coefficient at least one of the wavelengths (near infrared wavelengths, Col 15 lines 45-51) is a value determined responsive to an analytic expression (substitute equations 3 into equation 2, Col 15 lines 45-51).

In regard to claim 21, Caro discloses a method according to claim 15 wherein comprising expressing the reduced scattering coefficient in at least one of the equations as an analytic function (Col 15 lines 17-19 and equation 3, Col 15).

In regard to claim 22, Caro discloses the analytic expression is a function of at least one unknown variable (absorption coefficient μ_a, Col 16 lines 45-66) having a value determinable responsive to a solution of the simultaneous equations (Col 16 lines 45-66).

In regard to claim 23, Caro as modified by Lepper discloses each and every limitation as discussed above in reference to claim 15.

In regard to claim 28, Caro discloses the localized region is a bolus of blood (Col 23 lines 6-12 and claim 8).

6. Claims 8 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Caro and Lepper as applied to Claims 1 and 15, further in view of "Mechanisms of light scattering from biological cells relevant to noninvasive optical-

tissue diagnostics" to Mourant J. R. *et al.* (Mourant), Applied Optics/ Vol. 37, No. 16/ 01-06-1998, pages 3586-3593. Caro discloses the analytic expressions (equations 2 and 3, Col 15 of Caro) for calculating the reduced scattering coefficient. Caro as modified by Lepper does not specifically disclose the function comprises an expression of the form $B\lambda.^{-C}$ where λ represents the wavelength and B and C are constants. Mourant teaches the function (the reduced scattering coefficient $\mu'_s(\lambda)$, equation 5 in the first paragraph of the right section in page 3587) comprises an expression of the form $B\lambda^{-C}$ where λ represents the wavelength ($c\lambda^{-x}$, second paragraph in the right section in page 3589) and B and C are constants (c is an over all amplitude factor, last paragraph in page 3587; x is the dependence of radius, second paragraph in the right section of page 3589). The function (Mourant) is an established model for estimating the reduced scattering coefficient at multiple light wavelengths. It would have been obvious to one with ordinary skill in the art at the time of the invention was made modify the analytic expressions (Caro as modified) to incorporate the fitting model (Mourant) in order to obtain more accurate estimation of the reduced scattering coefficient.

In regard to claim 24, Caro as modified by Lepper and Mourant discloses each and every limitation as discussed above in reference to claim 8.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Caro and Lepper as applied to Claim 1, further in view of "Noninvasive monitoring of glucose concentration with optical coherence tomography" to Esenaliev et al. (Esenaliev), Optics Letter, Optical Society of America/ Vol 26, No. 13/ 07-01-2001,

pages 992-994. Caro as modified by Lepper discloses the signal generator comprises an optical device (controller unit 183 , Fig. 10 of Caro) that receives light from the light source that is scattered from the region (optical fiber means 181, Fig. 9 of Caro) and generates a signal responsive to the scattered light and light from the light source reflected by a reflector (beamsplitter 118, Fig. 9 and Col 18 lines 1-30 of Caro). Caro as modified does not specifically disclose the signal generator comprises an optical coherence tomography device that receives light from the light source that is scattered from the region and generates an interference signal responsive to an interference pattern between the scattered light and light from the light source reflected by a reflector. Esenaliev teaches the signal generator (interferometer, first paragraph in the right section of page 992) comprises an optical coherence tomography device (optical coherence tomography system, first paragraph in the right section of page 992) that receives light from the light source that is scattered from the region and generates an interference signal responsive to an interference pattern between the scattered light and light from the light source (first and paragraphs in the right section of page 992). Caro as modified by Lepper discloses the use of optical fibers (elements 116 and 119, Fig. 9 of Caro), beamsplitter (element 118, Fig 9 of Caro), and light detector (element 141, Fig. 10 of Caro) to detect reflected light signals. It would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the signal generator (Caro) to incorporate an optical coherence tomography device (Esenaliev) in order to obtain more accurate concentrations of analytes because the OCT techniques permits precise measurement of signal changes in the region of interest.

8. Claims 11-13 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Caro and Lepper as applied to Claims 1 and 15, further in view of PCT publication (WO 02/15776 to Nagar *et al.* (Nagar). In regard to claim 11, Caro as modified by Lepper discloses the controller locates the localized region (Fig. 1 of Caro; penetration depth d, Col 14 lines 56-66 and equation 4, Col 15 of Caro). Caro as modified by Lepper dos not specifically disclose the controller identifies and the localized region in a larger region comprising the localized region. Nagar teaches the controller (controller 30, Figure) locates and identifies (locates a blood vessel in a person's body lines 23-30, page 2) the localized region in a larger region comprising the localized region (lines 14-17, page 3). It would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the controller (Caro as modified) to locate and identify localized region within a larger region base on the analysis of detected photoacoustic signals in order to sufficiently measure the concentrations of analytes in the correct region of interest.

In regard to claim 12, Caro as modified by Lepper discloses the controller controls the light source to illuminate the region with light that is absorbed by a component characteristic of the localized region (Col 6 lines 5-30 of Caro); receives signals generated by the signal generator responsive to intensity of the light (Col 6 lines 5-17 of Caro) from the light source in different locations in a larger region (Fig. 1 of Caro); uses the signals to assay the characteristic component (absorption, Col 6 lines 5-14) in different localized regions in a larger region (Fig. 1 of Caro; penetration depth d, Col 14 lines 56-66 and equation 4, Col 15 of Caro). Caro as modified by Lepper does

not specially disclose the controller identifies and locates the localized region responsive to the assay. Nagar teaches the controller (controller 30, Figure) locates and identifies (locates a blood vessel in a person's body lines 23-30, page 2) the localized region responsive to the assay (lines 14-17, page 3). It would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the controller (Caro as modified) to locate and identify localized region base on the analysis of detected photoacoustic signals in order to sufficiently measure the concentrations of analytes in the correct region of interest.

In regard to claim 13, Caro as modified by Lepper discloses the apparatus comprises at least one acoustic transducer (transducer 108, Fig. 11 of Caro), and to locate the localized region (Fig. 1 of Caro; penetration depth d, Col 14 lines 56-66 and equation 4, Col 15 of Caro) the controller: receives signals generated by the at least one acoustic transducer responsive to acoustic energy reflected by features in the larger region (Col 6 lines 5-17; Col 14 lines 33-36 of Caro). Nagar teaches the apparatus glucometer 60 in the figure) comprises at least one acoustic transducer controllable to transmit ultrasound (transducer 62 and 64 in the figure), and to identify and locate the localized region the controller:controls the at least one transducer to transmit ultrasound into the larger region (lines 23-24, page 2); receives signals generated by the at least one acoustic transducer responsive to acoustic energy reflected by features in the larger region from the transmitted ultrasound (lines 27-31, page 2); and uses the signals to identify and locate the features and thereby the localized region (lines 27-31, page 2). It is well-known in the art that an ultrasound transducer is capable to generate

ultrasound waves when the piezoelectric material coated on the transducer receiving electrical energy. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the ultrasound transducer in the apparatus (Caro as modified) to generate ultrasound waves to locate and identify the region of interest of the tissue in order to obtain more precise measurements for determining the concentrations of analytes in blood.

In regard to claim 25, Caro as modified by Lepper and Nagar discloses each and every limitation as discussed above in reference to claim 11.

In regard to claim 26, Caro as modified by Lepper and Nagar discloses each and every limitation as discussed above in reference to claim 12.

In regard to claim 27, Caro as modified by Lepper and Nagar discloses each and every limitation as discussed above in reference to claim 13.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Caro and Lepper as applied to Claim 15, further in view of U.S. Patent 6,751,490 to Esenaliev *et al.* (Esenaliev). In regard to claim 17, Caro as modified by Lepper discloses a method to determine the extinction coefficient at least one of the wavelengths of the plurality of wavelengths (Col 15 line 2 – Col 16 line 56 of Caro) comprises: from a given location illuminating the region with light at the wavelength so as to generate photoacoustic waves in the region (Col 13 lines 37-45 of Caro), detect the amplitude of the generated photoacoustic waves with increase of distance in the tissue region from the given location (Col 22 lines 27-35 of Caro) and determine the

extinction coefficient (equation 2 and 3, Col 15 of Caro). Caro as modified also discloses to obtain acoustic signal Caro as modified by Lepper does not specifically disclose to determine a rate of decrease amplitude of the generated photoacoustic waves and determine the extinction coefficient from the determined rate of decrease. Esenaliev teaches to determine a rate of decrease amplitude of the generated photoacoustic waves (slope, Col 13 lines 19-29 and Fig. 15) and determine the extinction coefficient (absorption coefficient, Col 13 lines 19-29 and equations 6 and 7, Col 9) from the determined rate of decrease (slope, Col 13 lines 19-29 and Fig. 15). It would have been obvious to one with ordinary skill in the art at the time of the was made was made to modify the method (Caro as modified) to incorporate the method of determining the extinction coefficient base on the rate of changes of the photoacoustic signals in different depths of the localized region in order to provide more accurate measurement of the concentrations of analytes.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Caro and Lepper as applied to Claim 15, further in view of U.S. Patent 6,751,490 to Esenaliev *et al.* (Esenaliev) as applied to claim 17, further in view of "Noninvasive monitoring of glucose concentration with optical coherence tomography" to Esenaliev et al. (Esenaliev), Optics Letter, Optical Society of America/ Vol 26, No. 13/ 07-01-2001, pages 992-994 as applied in claim 10. In regard to claim 18, Caro as modified by Lepper and Esenaliev discloses all claim limitations except a method using optical coherence tomography to determine a rate of decrease of intensity of the light

with increase of distance in the tissue region from the given location. The NPL of Esenaliev teaches using the optical coherence tomography (second paragraph in the right section in page 992) to determine a rate of decrease of intensity of the light (slope of OCT signal, Fig. 4). It would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the method (Caro) to incorporate an optical coherence tomography device (Esenaliev) in order to obtain more accurate determinations of the concentrations of analytes because the OCT techniques permits high sensitivity and precise measurement of signal changes in the region of interest.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHU CHUAN LIU whose telephone number is (571)270-5507. The examiner can normally be reached on M-TH 8:00am~5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Isabella can be reached on 571-272-4749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3777
.